

WHAT IS CLAIMED IS:

1. A system comprising:  
a network;  
5 a plurality of computing nodes coupled via the network;  
wherein the plurality of nodes includes a first node operable to:  
detect a conflict between two replicas for a data object; and  
modify a tree structure to reflect the conflict;  
wherein said modifying the tree structure to reflect the conflict comprises  
10 adding information to the tree structure to represent the conflict between the two replicas.

2. The system of claim 1,  
wherein said modifying the tree structure to reflect the conflict comprises  
adding a branch point to the tree structure so that the two replicas are represented in the  
15 tree structure as child replica versions of a parent replica version.

3. The system of claim 1,  
wherein said detecting the conflict between the two replicas comprises  
detecting a conflict between a first replica and a second replica;  
20 wherein the plurality of nodes includes a second node that stores the first  
replica and a third node that stores the second replica.

4. The system of claim 1,  
wherein said detecting the conflict between the two replicas comprises  
25 detecting a conflict between a version of a first replica and a version of a second replica.

5. The system of claim 4,  
wherein the plurality of nodes includes a second node that stores the version of  
the first replica and a third node that stores the version of the second replica.

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6. The system of claim 1,  
wherein the conflict between the two replicas is caused by update operations  
that update the two replicas.

5 7. The system of claim 6,  
wherein the update operations that update the two replicas comprise concurrent  
update operations.

8. The system of claim 1,  
10 wherein the conflict between the two replicas is caused by the two replicas  
being independently updated in different network partitions.

9. The system of claim 1,  
wherein the data object comprises a first file;  
15 wherein the first node is further operable to create a plurality of files  
representing the conflict between the two replicas;  
wherein said creating the plurality of files comprises:  
creating a second file corresponding to one of the replicas; and  
creating a third file corresponding to the other replica.

20 10. The system of claim 9,  
wherein said creating the second file and the third file comprises creating the  
second file and the third file in a common location.

25 11. The system of claim 10,  
wherein the first file is stored in a first file system directory;  
wherein said creating the second file and the third file in the common location  
comprises creating the second file and the third file in the first file system directory.

30 12. The system of claim 9,

wherein the first file has a first name;  
wherein said creating the second file comprises creating the second file with a  
second name based on the first name;  
wherein said creating the third file comprises creating the third file with a third  
5 name based on the first name.

13. A system comprising:  
a network;  
10 a plurality of computing nodes coupled via the network;  
wherein the plurality of nodes includes a first node operable to:  
maintain a tree of versions, wherein each version represents a  
version of a first replica for a data object;  
determine that a conflict occurred between a second replica for the  
15 data object and a third replica for the data object; and  
modify the tree of versions to reflect the conflict.

14. A system comprising:  
20 a network;  
a plurality of computing nodes coupled via the network;  
wherein the plurality of nodes includes a first node operable to:  
create a tree of replica versions for a first file, wherein the tree  
indicates a conflict between a first replica version of the first file and a second replica  
25 version of the first file;  
create a second file, wherein the second file corresponds to the first  
replica version; and  
create a third file, wherein the third file corresponds to the second  
replica version.

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15. The system of claim 14,  
wherein the first file has a first name;  
wherein said creating the second file comprises creating the second file with a  
second name, wherein the second name is based on the first name;  
5 wherein said creating the third file comprises creating the third file with a third  
name, wherein the third name is based on the first name.

16. The system of claim 14,  
wherein the first file is located in a first directory;  
10 wherein said creating the second file comprises creating the second file in the  
first directory;  
wherein said creating the third file comprises creating the third file in the first  
directory.

15 17. A carrier medium comprising program instructions executable to  
implement the method of:  
detecting a conflict between two replicas for a data object; and  
modifying a tree structure to reflect the conflict;  
20 wherein said modifying the tree structure to reflect the conflict comprises  
adding information to the tree structure to represent the conflict between the two replicas.

18. The carrier medium of claim 17,  
wherein said modifying the tree structure to reflect the conflict comprises  
25 adding a branch point to the tree structure so that the two replicas are represented in the  
tree structure as child replica versions of a parent replica version.

19. The carrier medium of claim 17,  
wherein said detecting the conflict between the two replicas comprises  
30 detecting a conflict between a version of a first replica and a version of a second replica.

20. The carrier medium of claim 17,  
wherein the conflict between the two replicas is caused by update operations  
that update the two replicas.

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21. The carrier medium of claim 20,  
wherein the update operations that update the two replicas comprise concurrent  
update operations.

10 22. The carrier medium of claim 17,  
wherein the conflict between the two replicas is caused by the two replicas  
being independently updated in different network partitions.

15 23. The carrier medium of claim 17,  
wherein the data object comprises a first file;  
wherein the method implemented by the program instructions further  
comprises creating a plurality of files representing the conflict between the two replicas;  
wherein said creating the plurality of files comprises:  
creating a second file corresponding to one of the replicas; and  
20 creating a third file corresponding to the other replica.

24. The carrier medium of claim 23,  
wherein said creating the second file and the third file comprises creating the  
second file and the third file in a common location.

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25. The carrier medium of claim 24,  
wherein the first file is stored in a first file system directory;  
wherein said creating the second file and the third file in the common location  
comprises creating the second file and the third file in the first file system directory.

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26. The carrier medium of claim 23,  
wherein the first file has a first name;  
wherein said creating the second file comprises creating the second file with a  
second name based on the first name;  
5 wherein said creating the third file comprises creating the third file with a third  
name based on the first name.

27. A carrier medium comprising program instructions executable to  
10 implement the method of:  
creating a tree of replica versions for a first file, wherein the tree indicates a  
conflict between a first replica version of the first file and a second replica version of the  
first file;  
creating a second file, wherein the second file corresponds to the first replica  
15 version; and  
creating a third file, wherein the third file corresponds to the second replica  
version.

28. A system comprising:  
20 a network;  
a plurality of computing nodes coupled via the network;  
wherein the plurality of nodes includes a first node operable to:  
detect a conflict between a plurality of replicas for a data object; and  
25 modify a tree structure to reflect the conflict;  
wherein said modifying the tree structure to reflect the conflict comprises  
adding information to the tree structure to represent the conflict between the plurality of  
replicas.

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29. A system comprising:  
a network;  
a plurality of computing nodes coupled via the network;  
wherein the plurality of nodes includes a first node that stores a first replica for  
5 a first data object and a second node that stores a second replica for the first data object;  
wherein the first node is operable to:  
detect a conflict between the first replica and the second replica;  
modify a tree structure to reflect the conflict;  
wherein said modifying the tree structure to reflect the conflict comprises  
10 adding information to the tree structure to represent the conflict between the first replica  
and the second replica.